

=====

Sequence Listing was accepted with existing errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)
217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: Mon May 14 12:25:53 EDT 2007

=====

Application No: 10585880

Version No: 1.1

Input Set:

Output Set:

Started: 2007-05-14 12:25:28.045

Finished: 2007-05-14 12:25:29.280

Elapsed: 0 hr(s) 0 min(s) 1 sec(s) 235 ms

Total Warnings: 4

Total Errors: 1

No. of SeqIDs Defined: 18

Actual SeqID Count: 18

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
E 224	<220>,<223> section required as <213> has Artificial sequence or Unknown in SEQID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)

SEQUENCE LISTING

<110> CHONNAM NATIONAL UNIVERSITY et al.

<120> MUCOSAL VACCINE ADJUVANTS CONTAINING BACTERIAL FLAGELLINS AS
AN ACTIVE COMPONENT

<130> Q95704

<140> 10/585,880

<141> 2006-07-11

<150> KR 10-2004-0001974

<151> 2004-01-12

<160> 18

<170> KopatentIn 1.71

<210> 1

<211> 1131

<212> DNA

<213> *Vibrio vulnificus*

<400> 1

```
atggctatca atgtaaacac taacgtgtca gcaatgaccg cacagcgta cctaaaccag 60
gccgctgaag gtcaacaaaa atcaatggag cgtttgtctt cgggctataa aatcaatagc 120
gcgaaagatg atgctgcagg tctacaaatt tctaaccgtt tgaactcgca aagccgtggt 180
ctcgacatgg cgggttaaaaa tgccaacgat ggtatctcta ttgcacagac tgctgaaggt 240
gcaatgacag agaccaccaa catcctacaa cgtatgcgtg accttgctt gcaatcgtct 300
aacggttcga actctcgctt tgaacgcgtg gcgattcaag aagaagtgtc agcgttgaac 360
caagaactta accgtatcgc agagacaacc tcttttggtg gtaacaaact ccttaacggt 420
acgtacggtt ctcaatcttt ccaaactcgt gctgactctg gtgaagctgt gatgctttct 480
atgggtaacc ttcgttcaga tacagacgcg atgggcggtg tgagctacaa atctgaagaa 540
ggcgtaggcg cagattggcg tgtaagcgac aacactgact tcacgatgtc ttatgtgaat 600
aagcaaggtg aagaaaaaga gatcacagtc aacgccaaag cgggtgacga tcttgaagaa 660
ctggcgactt acatcaacgg tcaaaacgat gatgtgaaag cgtcggtcgg tgaaggcggc 720
aaactgcagc tattegcttc taaccaacgt gtagaaggtg aagtggaatt cgggtggtggt 780
ctagcgtctg agttgaacat tgggtgatggc accaaaacca atgtgagcaa cattgatgtc 840
acgacgggtg ctggctctca agaagcagta gcgatcattg atggcgcat gaaatcggta 900
gacagtgagc gtgcctctct aggtgcattc caaaaccgtt tcaaccatgc aatcagcaac 960
```

ctaagcaaca tcaatgagaa cgtaaacgct tcgagcagcc gtatcaagga taccgactac 1020

gcgaaagaaa cgactcagat gactaagacg caaattctgc agcaggcgag tacttctatc 1080

ctggcgcgagg cgaagcagtc accatctgca gctcttagct tggtgggcta a 1131

<210> 2

<211> 376

<212> PRT

<213> Vibrio vulnificus

<400> 2

Met Ala Ile Asn Val Asn Thr Asn Val Ser Ala Met Thr Ala Gln Arg
1 5 10 15

Tyr Leu Asn Gln Ala Ala Glu Gly Gln Gln Lys Ser Met Glu Arg Leu
20 25 30

Ser Ser Gly Tyr Lys Ile Asn Ser Ala Lys Asp Asp Ala Ala Gly Leu
35 40 45

Gln Ile Ser Asn Arg Leu Asn Ser Gln Ser Arg Gly Leu Asp Met Ala
50 55 60

Val Lys Asn Ala Asn Asp Gly Ile Ser Ile Ala Gln Thr Ala Glu Gly
65 70 75 80

Ala Met Thr Glu Thr Thr Asn Ile Leu Gln Arg Met Arg Asp Leu Ala
85 90 95

Leu Gln Ser Ser Asn Gly Ser Asn Ser Arg Ser Glu Arg Val Ala Ile
100 105 110

Gln Glu Glu Val Ser Ala Leu Asn Gln Glu Leu Asn Arg Ile Ala Glu
115 120 125

Thr Thr Ser Phe Gly Gly Asn Lys Leu Leu Asn Gly Thr Tyr Gly Ser
130 135 140

Gln Ser Phe Gln Ile Gly Ala Asp Ser Gly Glu Ala Val Met Leu Ser
145 150 155 160

Met Gly Asn Leu Arg Ser Asp Thr Asp Ala Met Gly Gly Leu Ser Tyr
165 170 175

Lys Ser Glu Glu Gly Val Gly Ala Asp Trp Arg Val Ser Asp Asn Thr
180 185 190

Asp Phe Thr Met Ser Tyr Val Asn Lys Gln Gly Glu Glu Lys Glu Ile
195 200 205

Thr Val Asn Ala Lys Ala Gly Asp Asp Leu Glu Glu Leu Ala Thr Tyr
210 215 220

Ile Asn Gly Gln Asn Asp Asp Val Lys Ala Ser Val Gly Glu Gly Gly
225 230 235 240

Lys Leu Gln Leu Phe Ala Ser Asn Gln Arg Val Glu Gly Glu Val Glu
245 250 255

Phe Gly Gly Gly Leu Ala Ser Glu Leu Asn Ile Gly Asp Gly Thr Lys
260 265 270

Thr Asn Val Ser Asn Ile Asp Val Thr Thr Val Ala Gly Ser Gln Glu
275 280 285

Ala Val Ala Ile Ile Asp Gly Ala Leu Lys Ser Val Asp Ser Glu Arg
290 295 300

Ala Ser Leu Gly Ala Phe Gln Asn Arg Phe Asn His Ala Ile Ser Asn
305 310 315 320

Leu Ser Asn Ile Asn Glu Asn Val Asn Ala Ser Ser Ser Arg Ile Lys
325 330 335

Asp Thr Asp Tyr Ala Lys Glu Thr Thr Gln Met Thr Lys Thr Gln Ile
340 345 350

Leu Gln Gln Ala Ser Thr Ser Ile Leu Ala Gln Ala Lys Gln Ser Pro
355 360 365

Ser Ala Ala Leu Ser Leu Leu Gly
370 375

<210> 3
<211> 1133
<212> DNA
<213> *Vibrio vulnificus*

<400> 3
atggcagtg atgtaaatac aaacgtagca gcaatgacag cacagcggtta cctgaataac 60
gcaaacagcg cacaacaaac ttcgatggag cgtctgtctt caggtttcaa aatcaacagt 120
gcaaaagatg acgcagccgg tctgcaaate tctaaccgct tgaacgtaca aagtcgcggt 180
ctagacgttg cggtagctaa cgccaacgac ggtatctcaa tcgcacaaac cgcagaaggt 240
gcgatgaacg agaccaccaa catcctacaa cgtatgcgtg acctatctct acaatccgcg 300
aacggctcaa actcaaaatc agagcgcgtg gcgattcaag aagaagtgac agcattgaat 360
gacgagctaa accgtattgc agaaaccacg tcttttggtg gtaacaagct gctaaacggt 420
acttacggca cgaaagcaat gcaaattggt gcggataacg gtgaagcggc catgctttca 480
ctgaaagaca tgcgctctga caacgtgatg atgggcccgc tgagctacca agctgaagaa 540
ggcaaagaca agaactggaa tgtggccgca ggcgacaacg acttgacgat tgcactgaca 600
gacagctttg gtaacgagca agagatcgaa atcaacgcga aagcgggtga tgacatcgaa 660

gagctagcga cgtacatcaa cgggtcaaact gaccttgtaa aagcgtcagt ggggtgaaggc 720
ggcaagctac agatctttgc tggtaacaac aaagttcaag gtgaaattgc tttctcaggt 780
agcctagctg gtgaacttgg cctaggcgaa ggcaaaaacg tcacggtaga cacgattgac 840
gtgacaaccg tacaaggtgc gcaagagtcg gtagcgattg tggatgcggc actgaaatac 900
gtagacagcc accgtgcaga gctgggtgca ttccagaacc gtttcaacca tgcaatcagc 960
aacttggaaca acatcaacga aaacgtgaac gcgtcgaaga gccgaatcaa agataccgac 1020
ttcgcgaaag aaacgactca gttgaccaag acacaaattc tatcgcaagc atcaagttcc 1080
attcttgctc aagcgaaaca agcgccaaac tcagcgctaa gtctactagg cta 1133

<210> 4
<211> 375
<212> PRT
<213> *Vibrio vulnificus*

<400> 4
Met Ala Val Asn Val Asn Thr Asn Val Ala Ala Met Thr Ala Gln Arg
1 5 10 15
Tyr Leu Asn Asn Ala Asn Ser Ala Gln Gln Thr Ser Met Glu Arg Leu
20 25 30
Ser Ser Gly Phe Lys Ile Asn Ser Ala Lys Asp Asp Ala Ala Gly Leu
35 40 45
Gln Ile Ser Asn Arg Leu Asn Val Gln Ser Arg Gly Leu Asp Val Ala
50 55 60
Val Arg Asn Ala Asn Asp Gly Ile Ser Ile Ala Gln Thr Ala Glu Gly
65 70 75 80
Ala Met Asn Glu Thr Thr Asn Ile Leu Gln Arg Met Arg Asp Leu Ser
85 90 95
Leu Gln Ser Ala Asn Gly Ser Asn Ser Lys Ser Glu Arg Val Ala Ile
100 105 110
Gln Glu Glu Val Thr Ala Leu Asn Asp Glu Leu Asn Arg Ile Ala Glu
115 120 125
Thr Thr Ser Phe Gly Gly Asn Lys Leu Leu Asn Gly Thr Tyr Gly Thr
130 135 140
Lys Ala Met Gln Ile Gly Ala Asp Asn Gly Glu Ala Val Met Leu Ser
145 150 155 160
Leu Lys Asp Met Arg Ser Asp Asn Val Met Met Gly Gly Val Ser Tyr
165 170 175
Gln Ala Glu Glu Gly Lys Asp Lys Asn Trp Asn Val Ala Ala Gly Asp

180	185	190
Asn Asp Leu Thr Ile Ala Leu Thr Asp Ser Phe Gly Asn Glu Gln Glu		
195	200	205
Ile Glu Ile Asn Ala Lys Ala Gly Asp Asp Ile Glu Glu Leu Ala Thr		
210	215	220
Tyr Ile Asn Gly Gln Thr Asp Leu Val Lys Ala Ser Val Gly Glu Gly		
225	230	235 240
Gly Lys Leu Gln Ile Phe Ala Gly Asn Asn Lys Val Gln Gly Glu Ile		
245	250	255
Ala Phe Ser Gly Ser Leu Ala Gly Glu Leu Gly Leu Gly Glu Gly Lys		
260	265	270
Asn Val Thr Val Asp Thr Ile Asp Val Thr Thr Val Gln Gly Ala Gln		
275	280	285
Glu Ser Val Ala Ile Val Asp Ala Ala Leu Lys Tyr Val Asp Ser His		
290	295	300
Arg Ala Glu Leu Gly Ala Phe Gln Asn Arg Phe Asn His Ala Ile Ser		
305	310	315 320
Asn Leu Asp Asn Ile Asn Glu Asn Val Asn Ala Ser Lys Ser Arg Ile		
325	330	335
Lys Asp Thr Asp Phe Ala Lys Glu Thr Thr Gln Leu Thr Lys Thr Gln		
340	345	350
Ile Leu Ser Gln Ala Ser Ser Ser Ile Leu Ala Gln Ala Lys Gln Ala		
355	360	365
Pro Asn Ser Ala Leu Ser Leu		
370	375	

```

<210>      5
<211>      1133
<212>      DNA
<213>      Vibrio vulnificus

<400>      5
gtggcgatca ccgtaaatac caatgtggca gcacttgctg cacagcgtca ttgaccagt    60
gcaaccgaca tgctgaatca atccttggag cgtttgtctt cagggaagcg tattaatagt    120
gcaaaagacg atgcggcagg gctgcaaatt tcgaatcgtc ttcagtcgca aatgcgtggt    180
ttagatatcg cgggtcgaaa tgccaatgat ggcatctcca ttatgcagac tgcggaaggg    240
gcaatgaatg aaaccactaa tattctccaa aggatgcgtg atctttcatt gcaatccgcc    300
aatggttcca atagctatgc tgaaagaata gccttacaag aagaaatgac cgcgttaa    360

```

gacgagttga accgtatcgc agaaaccacc tcgttcggtg ggcgtaaatt gctcaatggt 420
tcctttggct cggtgcctt tcagataggg gcagcgtcag gtgaagcggg gcaagtgcaa 480
ctgaagtcga tgcgcagtga tggattgat atgggtggct tcagttacat tgcaaacgga 540
cgtgcccgtt ctgattggca agtaaaagag ggggcgaatg cgcttagcat gtcattcacg 600
aatcgttttg gtgaaacaga aacgatccaa attaatgcga aagccggcga tgatatcgaa 660
gagcttgcca cctacattaa tggtcagact gacaaagtca cggcatcggg gaatgaagaa 720
ggtcagctac agttgtttat ggccggcgaa gaaacctcag gaacgttatc gttttcagga 780
gacttagcca gtgaactcgg ttgcaacta aaaggttacg atgcggtgga taatatcgac 840
attacttctg tcggtggcgc tcaacaagca gtggctgtcc ttgataccgc gatgaaatac 900
gtcgatagtc atcgtgctga gctaggggca tatcaaaacc gcttcagcca tgcgattaat 960
aacctcgaca acatccacga aaacttggcg acatcaaaca gtcgcattca agatacagac 1020
tatgcgaagg aaaccacgcg catggtcaaa caacagatcc tacagcaagt cagtacttct 1080
atthtggcgc aggcgaaaaa agggccgaat ctgcggttga ccttgcgtggg ata 1133

<210> 6
<211> 375
<212> PRT
<213> *Vibrio vulnificus*

<400> 6
Val Ala Ile Thr Val Asn Thr Asn Val Ala Ala Leu Val Ala Gln Arg
1 5 10 15
His Leu Thr Ser Ala Thr Asp Met Leu Asn Gln Ser Leu Glu Arg Leu
20 25 30
Ser Ser Gly Lys Arg Ile Asn Ser Ala Lys Asp Asp Ala Ala Gly Leu
35 40 45
Gln Ile Ser Asn Arg Leu Gln Ser Gln Met Arg Gly Leu Asp Ile Ala
50 55 60
Val Arg Asn Ala Asn Asp Gly Ile Ser Ile Met Gln Thr Ala Glu Gly
65 70 75 80
Ala Met Asn Glu Thr Thr Asn Ile Leu Gln Arg Met Arg Asp Leu Ser
85 90 95
Leu Gln Ser Ala Asn Gly Ser Asn Ser Tyr Ala Glu Arg Ile Ala Leu
100 105 110
Gln Glu Glu Met Thr Ala Leu Asn Asp Glu Leu Asn Arg Ile Ala Glu
115 120 125

Thr Thr Ser Phe Gly Gly Arg Lys Leu Leu Asn Gly Ser Phe Gly Ser
 130 135 140
 Ala Ala Phe Gln Ile Gly Ala Ala Ser Gly Glu Ala Val Gln Val Gln
 145 150 155 160
 Leu Lys Ser Met Arg Ser Asp Gly Ile Asp Met Gly Gly Phe Ser Tyr
 165 170 175
 Ile Ala Asn Gly Arg Ala Arg Ser Asp Trp Gln Val Lys Glu Gly Ala
 180 185 190
 Asn Ala Leu Ser Met Ser Phe Thr Asn Arg Phe Gly Glu Thr Glu Thr
 195 200 205
 Ile Gln Ile Asn Ala Lys Ala Gly Asp Asp Ile Glu Glu Leu Ala Thr
 210 215 220
 Tyr Ile Asn Gly Gln Thr Asp Lys Val Thr Ala Ser Val Asn Glu Glu
 225 230 235 240
 Gly Gln Leu Gln Leu Phe Met Ala Gly Glu Glu Thr Ser Gly Thr Leu
 245 250 255
 Ser Phe Ser Gly Asp Leu Ala Ser Glu Leu Gly Leu Gln Leu Lys Gly
 260 265 270
 Tyr Asp Ala Val Asp Asn Ile Asp Ile Thr Ser Val Gly Gly Ala Gln
 275 280 285
 Gln Ala Val Ala Val Leu Asp Thr Ala Met Lys Tyr Val Asp Ser His
 290 295 300
 Arg Ala Glu Leu Gly Ala Tyr Gln Asn Arg Phe Ser His Ala Ile Asn
 305 310 315 320
 Asn Leu Asp Asn Ile His Glu Asn Leu Ala Thr Ser Asn Ser Arg Ile
 325 330 335
 Gln Asp Thr Asp Tyr Ala Lys Glu Thr Thr Arg Met Val Lys Gln Gln
 340 345 350
 Ile Leu Gln Gln Val Ser Thr Ser Ile Leu Ala Gln Ala Lys Lys Gly
 355 360 365
 Pro Asn Leu Ala Leu Thr Leu
 370 375

<210> 7

<211> 1158

<212> DNA

<213> *Vibrio vulnificus*

<400> 7

atggctgttaa cagtaagcac taacgtatcc gcgatgactg cgcaacgtta tctaaacaaa 60

gcgacagatg agttaaacac ctcaatggaa cgtttgtcat ctggtcataa aattaatagc 120
 gccaaagatg atgcggccgg tttgcaaatt tctaaccgct taaccgctca gtctcgtggc 180
 ctagatgtgg cgatgcgtaa tgccaacgat ggtatctcta tcgctcaaac cgccgaaggg 240
 gcgatgaatg aagcgacggc agtcttgacg cgcattgctg acttgctgat tcaatccgcg 300
 aacgggtacta actcaacgtc tgagcgccaa gcgattcatg aagaagcgag tgctctacaa 360
 gacgaaatta accgtattgc tgaaaccaca tcgtttgggtg gacgccgtct actgaatggc 420
 acctttgggtg atgcagcatt ccagattggg tctaactctg gtgaagcgat gattatgggc 480
 ttaaccagca tccgtgccga tgatttccgt atgggtggca cgaccttcca gtctgaaaat 540
 ggcaaaaaca aagattggga agtgagcgcg gataacgcag agctgaacat cgtattgcc 600
 gagatgggtg aagatgaaga tggcaatgtt atcgatttag aaatcaacat catggcgaaa 660
 agcgggtgatg atattgaaga attggcaacg tacatcaatg gtcaatcgga ctacatcaac 720
 gcatcggtaa gtgaagatgg caagctgcaa atctttgttg ctcaaccaa tgtgaaaggc 780
 gatatctcga tttcgggtag ccttgccctc gaactgggtt tgagtgcga accgattgcg 840
 acaacagtac aagatttga tctgcgtacc gtacaagggt ctcagaacgc aattagcggt 900
 attgacgcgg cattgaagta cgttgattca caacgtgcgg acttaggtgc aaaacagaac 960
 cgtttaagcc acagtattaa taacttggcg aacgttcaag aaaacgttga tgcacgaac 1020
 agccgtatta aagatactga ttttgcaag gaaacgacgc aaatgacgaa agcacagatt 1080
 ttgcaacagg caggtacttc tattcttgct caagcaaac aattgccaaa ctctgcaatg 1140
 tcactattgc agggctaa 1158

<210> 8
 <211> 383
 <212> PRT
 <213> *Vibrio vulnificus*

<400> 8
 Met Ala Val Thr Val Ser Thr Asn Val Ser Ala Met Thr Ala Gln Arg
 1 5 10 15
 Tyr Leu Asn Lys Ala Thr Asp Glu Leu Asn Thr Ser Met Glu Arg Leu
 20 25 30
 Ser Ser Gly His Lys Ile Asn Ser Ala Lys Asp Asp Ala Ala Gly Leu
 35 40 45
 Gln Ile Ser Asn Arg Leu Thr Ala Gln Ser Arg Gly Leu Asp Val Ala
 50 55 60

Met	Arg	Asn	Ala	Asn	Asp	Gly	Ile	Ser	Ile	Ala	Gln	Thr	Ala	Glu	Gly	65	70	75	80
Ala	Met	Asn	Glu	Ala	Thr	Ala	Val	Leu	Gln	Arg	Met	Arg	Asp	Leu	Ser	85	90	95	
Ile	Gln	Ser	Ala	Asn	Gly	Thr	Asn	Ser	Thr	Ser	Glu	Arg	Gln	Ala	Ile	100	105	110	
His	Glu	Glu	Ala	Ser	Ala	Leu	Gln	Asp	Glu	Ile	Asn	Arg	Ile	Ala	Glu	115	120	125	
Thr	Thr	Ser	Phe	Gly	Gly	Arg	Arg	Leu	Leu	Asn	Gly	Thr	Phe	Gly	Asp	130	135	140	
Ala	Ala	Phe	Gln	Ile	Gly	Ser	Asn	Ser	Gly	Glu	Ala	Met	Ile	Met	Gly	145	150	155	160
Leu	Thr	Ser	Ile	Arg	Ala	Asp	Asp	Phe	Arg	Met	Gly	Gly	Thr	Thr	Phe	165	170	175	
Gln	Ser	Glu	Asn	Gly	Lys	Asn	Lys	Asp	Trp	Glu	Val	Ser	Ala	Asp	Asn	180	185	190	
Ala	Glu	Leu	Asn	Ile	Val	Leu	Pro	Glu	Met	Gly	Glu	Asp	Glu	Asp	Gly	195	200	205	
Asn	Val	Ile	Asp	Leu	Glu	Ile	Asn	Ile	Met	Ala	Lys	Ser	Gly	Asp	Asp	210	215	220	
Ile	Glu	Glu	Leu	Ala	Thr	Tyr	Ile	Asn	Gly	Gln	Ser	Asp	Tyr	Ile	Asn	225	230	235	240
Ala	Ser	Val	Ser	Glu	Asp	Gly	Lys	Leu	Gln	Ile	Phe	Val	Ala	Gln	Pro	245	250	255	
Asn	Val	Lys	Gly	Asp	Ile	Ser	Ile	Ser	Gly	Ser	Leu	Ala	Ser	Glu	Leu	260	265	270	
Gly	Leu	Ser	Asp	Glu	Pro	Ile	Ala	Thr	Thr	Val	Gln	Asp	Leu	Asp	Leu	275	2		